

WHAT IS CLAIMED IS:

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An inkjet ink composition comprising:

a colorant;

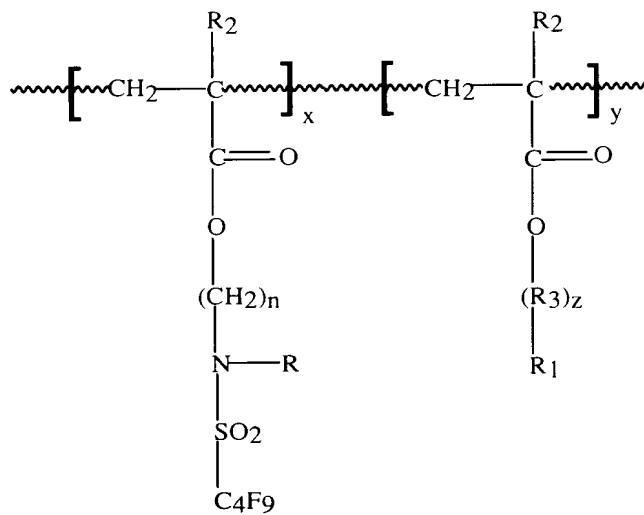
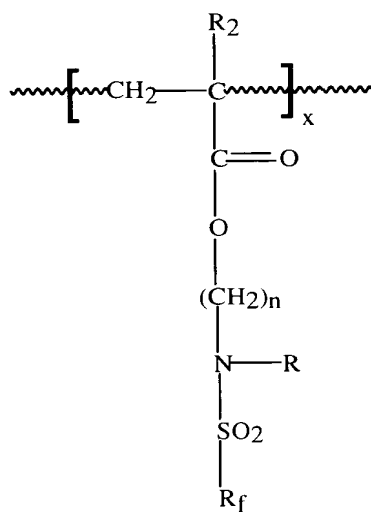
a vehicle; and

a fluorochemical surfactant;

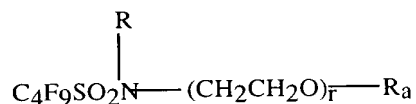
wherein the fluorochemical surfactant comprises one or more

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surfactants having one or more chemical structures selected from:



and



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wherein

~~~~~ represents a bond in a polymer chain;

R<sub>f</sub> is -C<sub>4</sub>F<sub>9</sub> or -C<sub>3</sub>F<sub>7</sub>;

R, R<sub>1</sub>, R<sub>2</sub> and R<sub>a</sub> are each independently hydrogen or alkyl groups

having 1 to 4 carbon atoms;

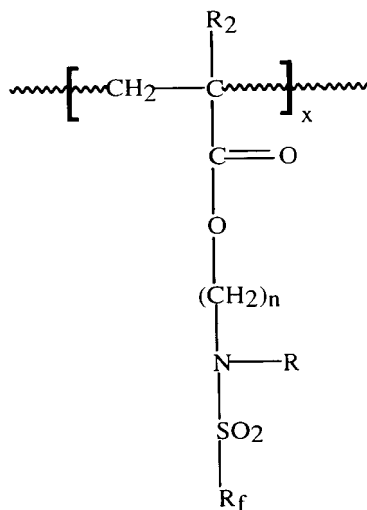
R<sub>3</sub> comprises one or more straight or branched polyalkylene-oxy groups having 2 to 6 carbon atoms in each group;

n is an integer from 2 to 10;

x, y and z are integers of at least 1; and

r is an integer of 2 to 20.

2. The ink composition of Claim 1, wherein the fluorochemical surfactant comprises one or more polymeric surfactants having a polymer chain comprising one or more units:



wherein

$R_f$  is  $-C_4F_9$  or  $-C_3F_7$ ;

R and  $R_2$  are each independently hydrogen or alkyl groups having 1 to 4 carbon atoms;

n is an integer from 2 to 10; and

x is an integer of at least 1.

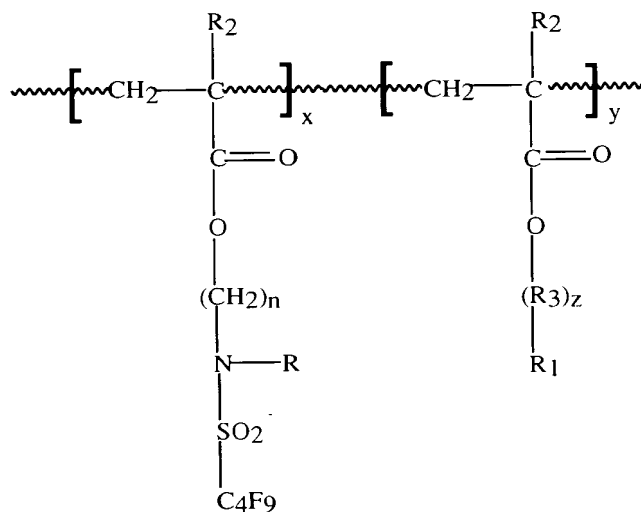
3. The ink composition of Claim 2, wherein

$R_f$  is  $-C_4F_9$ ;

R and  $R_2$  are each independently hydrogen or methyl groups; and

n is 2.

4. The ink composition of Claim 1, wherein the fluorochemical surfactant comprises one or more polymeric surfactants having a polymer chain comprising one or more units:



wherein

R,  $R_1$  and  $R_2$  are each independently hydrogen or alkyl groups having 1 to 4 carbon atoms;

R<sub>3</sub> comprises one or more straight or branched polyalkylene-oxy groups having 2 to 6 carbon atoms in each group;

n is an integer from 2 to 10; and

x, y and z are integers of at least 1.

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5. The ink composition of Claim 4, wherein R<sub>3</sub> comprises



or



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wherein p is an integer of 1 to about 128 and q is an integer of 0 to about

54.

6. The ink composition of Claim 5, wherein R<sub>3</sub> comprises



wherein p is about 17 and q is 0.

7. The ink composition of Claim 5, wherein R<sub>3</sub> comprises



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wherein p is an integer of about 14 to about 128 and q is an integer of about 9 to about 54.

8. The ink composition of Claim 5, wherein p is an integer of about 7 to about 128 and q is an integer of about 21 to about 54.

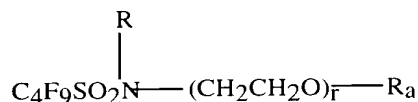
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9. The ink composition of Claim 8, wherein p is about 11 and q is about 21.

10. The ink composition of Claim 9, wherein the polymer chain does not comprise any other monomeric units.

11. The ink composition of Claim 5, wherein the polymer chain further comprises units derived from maleic anhydride, acrylonitrile, vinyl acetate, vinyl chloride, styrene, methyl acrylate, methyl methacrylate, ethylene, isoprene, butadiene, or combinations thereof.

12. The ink composition of Claim 1, wherein the fluorochemical surfactant comprises one or more surfactants having a chemical structure



wherein

R and R<sub>a</sub> are each independently hydrogen or alkyl groups having 1 to 4 carbon atoms; and

r is an integer of 2 to 20.

13. The ink composition of Claim 12, wherein R and R<sub>a</sub> are each independently methyl and r is an integer from 4 to 10.

14. The ink composition of Claim 1, wherein the vehicle is nonaqueous.

15. The ink composition of Claim 1, wherein the vehicle comprises a polymerizable material.

16. The ink composition of Claim 15, wherein the polymerizable material is free-radically polymerizable.

17. The ink composition of Claim 16, wherein the free-radically polymerizable material comprises at least one of an acrylate monomer and an acrylate oligomer.

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18. The ink composition of Claim 1, wherein the vehicle is aqueous.

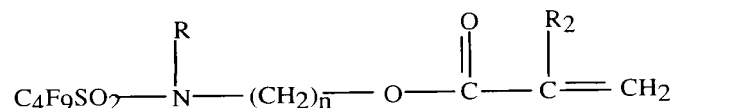
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19. The ink composition of Claim 18 further comprising at least one of a humectant, and a colorant stabilizer.

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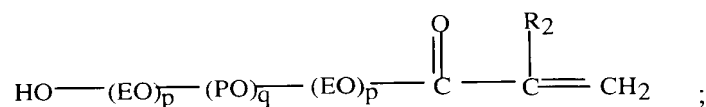
20. The ink composition of Claim 1, wherein the fluorochemical surfactant comprises a reaction product of:

(a) at least one compound having a formula

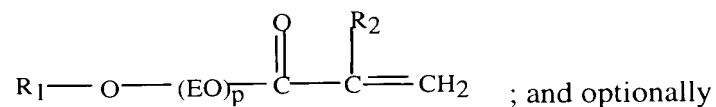
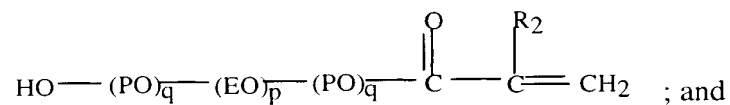


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(b) at least one compound selected from the group consisting of

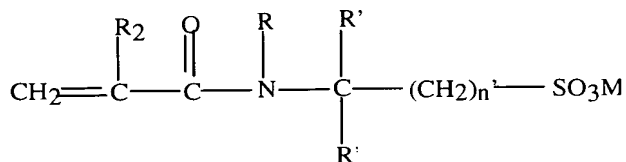


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(c) at least one compound having a formula



wherein

R, R<sub>1</sub>, R' and R<sub>2</sub> are each independently hydrogen or an alkyl group having from 1 to 4 carbon atoms;

n is an integer from 2 to 10;

n' is an integer of 1 to 10;

p is an integer of 1 to about 128;

q is an integer of 0 to about 54; and

M is hydrogen, a metal cation, or a protonated tertiary amine.

21. The inkjet ink composition of Claim 1, wherein the ink composition has a Foam Stability Test value of less than about 30%.

22. The inkjet ink composition of Claim 21, wherein the ink composition is free of silicone-containing surfactants and defoamers.

23. A method of ink jet printing comprising ejecting the ink composition of Claim 1 from an ink jet printer head onto a substrate.

24. The method of Claim 23 further comprising the step of exposing the printed ink to actinic radiation.

25. The method of Claim 24, wherein the actinic radiation comprises ultraviolet radiation.

26. An article of manufacture comprising a substrate printed according to the method of Claim 23.

27. The article of Claim 26, wherein the substrate comprises wood, metal, paper, woven fabric, nonwoven fabric, leather, resin-coated paper, foil, a foam, a polymer film, or a combination thereof.

5 28. The article of Claim 27, wherein the substrate comprises single and multilayer nonporous polymer films of poly(vinyl chloride), polybutylene terephthalate, polyethylene terephthalate, acrylonitrile-butadiene-styrene copolymer, polystyrene, polycarbonate, polyurethane, epoxy, polyimide, polyamide, polymethyl (meth)acrylate, polyolefin, polyamideimide, polyacrylate, 10 polyacrylamide, melamine resins, polyvinyl butyral and copolymers thereof, and combinations thereof.

15 29. The article of Claim 27, wherein the substrate comprises single and multilayer constructions of paper, cardboard, non-woven fabric, woven fabric, leather, microporous film, and combinations thereof.

30. The article of Claim 26, wherein the article comprises a component for an outdoor sign, a roadway, a motor vehicle, a boat, an aircraft, or furniture.

20 31. The article of Claim 30, wherein the article comprises a retroreflective article.

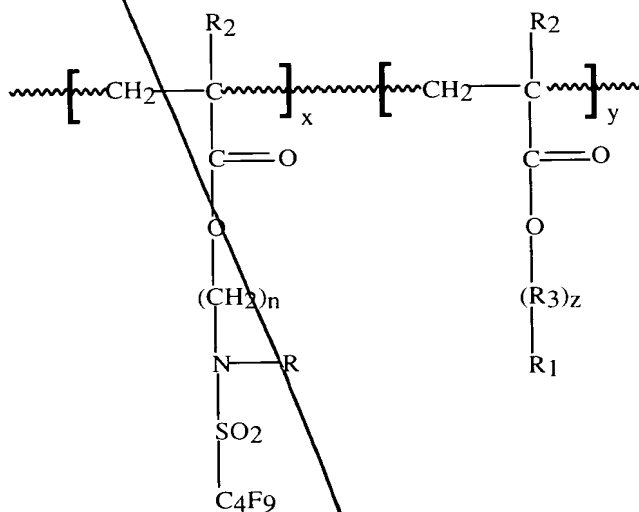
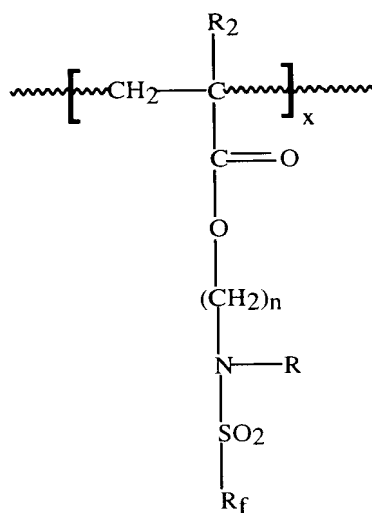
32. The article of Claim 31, wherein the substrate comprises polymethyl methacrylate.

25 33. An ink jet printable radiation curable clear coat comprising:  
a vehicle comprising a polymerizable material;  
a photoinitiator; and  
a fluorochemical surfactant;  
30 wherein no colorant is present; and  
further wherein the fluorochemical surfactant comprises one or more surfactants having one or more chemical structures selected from:



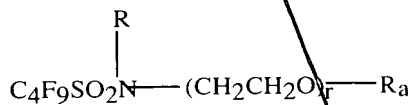
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and



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wherein

~~~~~ represents a bond in a polymer chain;

R_f is $-C_4F_9$ or $-C_3F_7$;

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Cont

R, R₁, R₂ and R_a are each independently hydrogen or alkyl groups having 1 to 4 carbon atoms;

R₃ comprises one or more straight or branched polyalkylene-oxy groups having 2 to 6 carbon atoms in each group;

n is an integer from 2 to 10;

x, y and z are integers of at least 1; and

r is an integer of 2 to 20.

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